Multilevel Governance in Disaster Management Policy:

Tracing the Development of Regional Partnerships through

The EU/EC Coordinating Function

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Network of Institutes and Schools of Public Administration in Central and Eastern Europe

21st Annual Conference, Belgrade, Serbia

May 16-18, 2013

The world watched transfixed as the massive wave of water inundated the shoreline. This was the nightmare scenario. The worst possible case for the coast of Japan as not one or two but three disasters occurred in rapid succession; first the earthquake, then the tsunami, then the crisis at the nuclear plant near Fukushima. As a result of the Tohoku earthquake and subsequent Tsunami, Reactors 1, 2 and 3 of the Fukushima Daiichi Nuclear power plant experienced a full meltdown due to a loss of the reactor's cooling systems[1]. As a result approximately 80,000 people were evacuated with a 20 kilometer radius of the power plant[2] With each disaster impacting the next, Japan's government was quickly overwhelmed.

This was not the first time a disaster of this magnitude has happened. In 1986, an incident took place near the town of Pripyat, Ukraine. In this incident there was a reactor meltdown and explosion at Chernobyl nuclear power plant releasing approximately 50 tons of radioactive fuel which "evaporated and were released by the explosion into the atmosphere" [3]. This fuel was then transported by wind and rain primarily to Belarus, Russian and Ukraine but also reached most of Europe from the Scandinavian Peninsula to the Mediterranean Sea[4]. The resulting explosion was the result of a failed engineering experiment. The effects of the incident at Chernobyl are still being felt today.

Both of these scenarios reflect how a national crisis can quickly have international consequences. Common to both of these scenarios is the lack of coordination and cooperation among the principal actors involved in managing the crisis. A primary reason for this lack of

[1] "3 nuclear reactors melted down after quake, Japan confirms". *CNN*. 6 June 2011. Retrieved April 10, 2012
[2] Associated Press, "No-go zone trespassers face fines, arrest", *Japan Times*, 22 April 2011, p. 1 Retrieved April 10, 2012
[3] Rhodes, R. (1993) 'Nuclear Renewal' as found on *Frontline,* Nuclear Reaction: Why Americans Fear Nuclear Power, retrieved April 10, 2013
[4] United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) (1998), UNSEAR 1998 Report, Annex D, Exposures from the Chernobyl Accident as found at http://www.unscear.org/docs/reports/1988annexd.pdf

cooperation and coordination is a lack of communication among the principal actors involved in managing the crisis. It is not merely that actors need to communicate more often but that they need to communicate more effectively, taking decisive action to remedy a situation without having to consult higher authorities. In both of these disasters governmental officials delayed or refused to release vital information to the public seeking to contain the severity of the incidents. For instance, the failure of governmental officials and officials at the Tokyo Electric Power Company (TEPCO) to specifically communicate the severity of the condition of the reactors at the Fukushima Nuclear site lead to an underestimation of the radiological threat emanating from the these reactors[5]. This pattern has continued to the present day as it was recently announced that TEPCO may have underestimated the water that leaked from a retaining pool by "as much as 50 times" due to the methodology used to calculate the leakage from a storage pool under reactor 1[6].

In the Chernobyl disaster the government of the USSR did not acknowledge the disaster itself until April 28th, 1986 almost three days after the incident had occurred[7]. Moreover, it did not acknowledge the severity of the disaster to the public. Those enlisted to clean up the disaster, denoted "liquidators", were also not fully informed and suffer from various physical and psychological issues incurred in the early aftermath of the disaster[8]

The importance of cooperation in disaster management and response

description of disasters in Japan and Ukraine? Because over the last decade the EU, in the actions of the European Commission's (EC) coordinating function, has responded not just to

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[5] Onishi, N. and Fackler, M, "Japan Held Nuclear Data, Leaving Evacuees in Peril", *New York Times*, August 8, 2011, retrieved April 10, 2012

[6] ."TEPCO 'underestimated' leak severity", The Japan News, Retrieved April 10, 2013

[7] McConnel, R. "Remembering the Soviet Response to Chernobyl, National Review Online, retrieved April 10, 2013

[8] Chernobyl's 700,000 "Liquidators" struggle with psychological and social consequences, *IAEA*, August 2005, retrieved April 10, 2013

disasters in Europe but in the international community at large. In, fact of the 148 times the EC coordinating function has been active from 01.01.2007 to 31.12.2011 only X percent were for members of the European Union. Among the activations include responding to floods in Indonesia and Bolivia, earthquakes, in Chile and Japan and fires in Albania and Moldova. The presence of these disasters, although quite unusual in their scope, is becoming more prevalent, with over 385 disasters recorded in 2010 (Georgieva, 2011).

However, all disasters are not created equal. In a recent speech given concerning the second anniversary of the triple disaster in Fukushima, Japan EC Commissioner for International Cooperation, Humanitarian Aid and Crisis Response Kristalina Georgieva stated as much:

> "In my three years as Commissioner, I have seen the results of the Haiti earthquake, of the Chile earthquake. We had floods in Australia, we had horrendous droughts hitting the Horn of Africa, and the Sahel region – twice! But these disasters that you have heard about represent only 9% of the disasters that are happening on this planet. These are the mega-disasters, but 91% of the disasters remain silent. We don't know about them, and yet, they devastate people and communities. Just to give you a couple of examples, there [is] not much news about [the] Ebola outbreak in Uganda or the devastating winter in Mongolia, killing people, animals and the local economy? (Georgieva, 2013)

Given the increased operational tempo brought on by these disasters. This leads one to ask what lessons have been learned by emergency managers from these nightmare scenarios. Specifically, what can local governments learn from the public, private and non-profit sector's response to these "mega disasters". There are a number of approaches to analyzing disaster management policies. This paper uses the construct first operationalized by Birkland and denoted as "focusing events" (Birkland, 1997). "Focal events" are disasters that serve to galvanize the attention of governmental officials and the public simultaneously.

As in most disasters, many actors were behind the curve, reacting to these "focal events". In particular, disaster management organizations have difficulty responding to the constantly changing scenario on the ground that accompanies focal events. What is needed is a way to become more proactive in addressing these changes. One way to address this issue is to provide a theoretical framework for addressing these changes.

Wicked Social Problems as focal events

Governments at all levels are increasingly required to deal with issues which contain a substantial amount of complexity and uncertainty. Hurricanes, earthquakes and acts of terrorism, are just a few of the "wicked social problems" or (WSPs) (Koppenjan and Klijn, 2006) facing today's governments and the public administrators that manage them.

In dealing with these issues most research in public administration has focused on the attributes of these WSPs. What is the scale of the problem? What are the lines of authority? What are the responses of organizations of competent jurisdiction? The focus on the attributes of the problem has often led public administrators and their organizations to prepare for the latest natural disaster and in doing so they are often behind the curve in responding to WSPs, leading to great loss of life or property or both (Bell, 2012). This phenomena can be best seen in the response of government to catastrophic or "focal events" which "galvanize the attention of both the public and elites simultaneously" (Birkland, 1997).

The focus on these attributes denotes a common methodological approach which sees governmental response as a linear process when in fact it is a complex, multifaceted process that requires understanding the interactions between (1) the institutional pressures of working within a complex regulatory framework; (2) the political pressures of bringing together different levels

of government with multiple agendas and (3) the interplay between governments and the citizens they serve.

Multilevel governance in disaster management: A definition and nexus

Multilevel governance is a useful framework from which to evaluate governmental responses to these three types of pressure. First coined by Marks (1992), multilevel governance describes the interactions of institutions on two different planes or dimensions; horizontal and vertical. The horizontal plane or dimension involves interactions among institutions at the same "territorial level" (local, state, federal, international) while the vertical plane denotes interactions among institutions at different territorial levels (Piattoni, 2010, 26-27). Piattoni, has expanded this definition to include a third plane or dimension, the state/society dimension (Piattoni, 2010, 27-30). These three planes can be thought of as three "axes" along which individuals and institutions interact. Piattoni referred to these axes as (1) "center-periphery"; (2) "domestic-international" and (3) "state-society". The first axis, X_1, refers to the level of decentralization present among the actors where greater centralization occurs as one approaches the origin. (Piattoni, 2010, 27-30). The second axis, X_2, refers to the level of internationalization, where "movement" away from the origin indicates less domestic control over policy and regulation. The third axis, X_3, refers to the level of privatization in which movement away from the origin is indicative of greater involvement of non-governmental organizations such as civil society groups. (Piattoni, 2010, 27-30). The relationship between these three axes is represented in Figure One reveals this paradigm. Specifically, Figure one details the relationship between the axes.

Figure One: Multilevel Governance Paradigm
Source: Piattoni 2010

X_2

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X_3

X_1
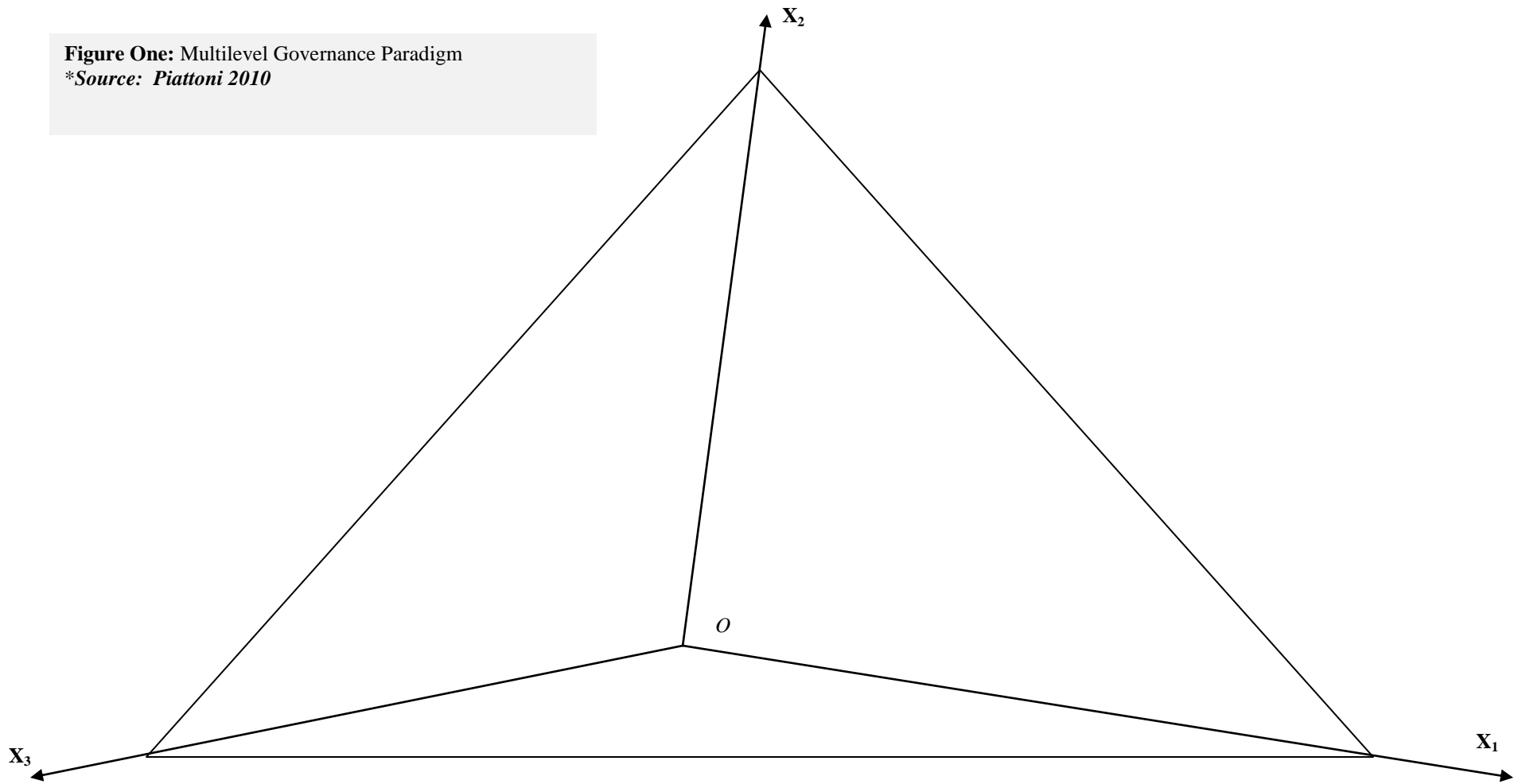
X_1= Center- Periphery dimension

X_2= Domestic -International Dimension

X_3=State- Society Dimension

Finally, multilevel governance asserts that "political arenas are interconnected and not nested" (Marks, et. al. 1996, 346). That is, interactions by lower levels of government are not wholly subsumed or contained within higher levels of government. Multilevel governance as a concept has evolved over time and was the result of disagreements in the scholarly literature concerning its nature and extent.

In practice, multilevel governance is expressed by the interaction of various levels of government with each other but not necessarily on the same plane or dimension. Actions by the local provincial governments to assist each other such as those among first responder organizations including police and fire departments is one example of interaction on the horizontal plane (X_1). The proliferation of agreements between the EU and various states outside of the EU is an example of interaction on the vertical plane (X_2). Finally, the interaction of various non-governmental actors such as the International Red Cross and International Red Crescent are an example of interaction on the state society axis (X_3).

Operationalizing the construct of Multilevel Governance: The importance of defining the network

This paper traces the development of a specific instance of multilevel governance, the EU's civil protection mechanism. In order to operationalize this construct one must first elucidate which type of multilevel government exists among the members of the EU's civil protection mechanism.

Multilevel governance has been further defined by Marks and Hooghe in (Bache and Flinders, et. al, 2004) as have two distinct types: Type 1 and Type 2. Type 1 revolves around the "dispersion of authority to a limited number of levels" These types of government are "general

purpose" in scope (Bach and Flinders et. al., 2004, 16). Type 2 involves organizations that are "task specific" have "intersecting memberships", are flexible in their design and have "no limit on the number of jurisdictional levels" (Bach and Flinders et. al., 2004, 17). The EU's civil protection mechanism is best defined as being an example of Type 2 multilevel governance. One prominent example of this activity, employed in responding to natural disasters, is the use of the Monitoring and Information Center or MIC.

The MIC is used as the operational variable upon which the social network analysis is based. Specifically, the MIC is made up of response teams that are constructed from participating countries. Once a request for assistance is generated, the MIC monitors the situation and if requested dispatches a team. This team then is activated and mobilized to the site of the disaster and renders assistance based on the expertise of the team members.

Once the disaster is over or assistance is no longer needed the members of the MIC team depart the disaster area. Interestingly, any country, regardless of membership in the EU can ask for assistance through the MIC which serves as a sort of one-stop shop for assistance in the event of a major disaster. Thus the operational boundaries of the network are continually being redefined in that new countries are requesting assistance on a yearly basis. Moreover, the percentage of countries outside the EU asking for assistance has increased since the establishment of the EUCPM[9]

The basis of the authority of the MIC comes from the legislation authorizing the EU's Civil Protection Mechanism (EUCPM). Specifically there are two pieces of legislation authorizing the EUCPM, Council Decision 2007/779/EC, Euratom establishing a Community Civil Protection Mechanism (recast) and the Council Decision establishing a Civil Protection

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[9] The Community mechanism for civil protection, European Commission, Humanitarian and Civil Protection, Disaster Management, Retrieved April 10, 2013

Financial Instrument (2007/162/EC, Euratom).[10] These decisions provide for mutual assistance between national civil services in the event a natural or man-made disaster which currently has 32 members (27 members of the EU plus, Croatia, Former Yugoslav Republic Of Macedonia, Iceland, Liechtenstein and Norway).

In addition to the MIC there is the Common Emergency and Information System (CECIS) which consists of "a web based alert notification system.[11] The mechanism itself operates on the basis of three types of agreements, bilateral, multilateral and regional agreements. When a disaster arises member states can request assistance.

For the purposes of this study the network for the EUCPM has been created from a database of 148 activations of the EUCPM between the years 2007-2011.

Measuring the EUCPM: the case for "action networks"

Now that the boundaries of the network have been established one must move to the type of network to be measured. This can be determined by a number of factors but this study focuses on networks that both disseminate information and can take actions to implement the recommendations made by the membership of the network. This study focuses on a special type of network denoted by Robert Agranoff, in his book Managing Within Networks, as "Public Management Networks (PMNs). Using the definition first proffered by O'Toole, Agranoff states that PMNs are "structures of interdependence involving multiple organizations… where one unit is not merely the formal subordinate of the others in some larger hierarchical arrangement" (O'Toole quoted in Agranoff, 2007, 7).

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[10] Civil Protection Legal Texts: the state of play, EU Civil Protection, Retrieved April 10, 2012.
[11] The Community mechanism for civil protection, European Commission, Humanitarian and Civil Protection, Disaster Management, Retrieved April 10, 2013

A key distinction between PMNs and the more traditional public bureaucracies is the locus of authority for management. In more traditional public bureaucracies, authority is vested legally in the positions of officials in the hierarchy of their organization. In PMNs, management is more collaborative and based more on consensus building (Agranoff, 2007, 8-9). The concept of collaborative management is crucial to the understanding of how a network functions since the "structure" (i.e., relationships between organizations and even between individuals engaged in their operation) are the locus of network activity. Overall, the management in networks is different than in most public bureaucracies because the authority among network actors is interdependent. Specifically, it is a network's ability and agility to respond to novel threats arising from natural and man-made disasters that determines the success of the network's responses.

The EUCPM is composed of 32 members in which each country is not the formal subordinate of the any of the others. Since any country, either within or outside of the EUCPM can request assistance, it is important to measure not just the actions of the member countries individually but the interactions among the countries collectively as they respond to natural and man-made disasters. In order to do this this study measures the number and density of interconnections between organizations involved in responding to these focal events such as floods, forrest fires, hurricanes and oil spills. In order to do this one must select the proper unit of analysis. This study traces the development of a specific type of PMN that can be characterized as "action networks" Action networks are those organizations that not only pass on information but also take action such as responding to a natural or man-made disaster (Agranoff, 2007).

In practice, PMNs span the boundaries of public, private and non-profit organizations which respond to natural and man-made disasters. Agranoff defines four distinct types of PMS based on their functions, just as the organization they are composed of serve different functions. These include: (1) Informational Networks, (2) Developmental Networks, (3) Outreach Networks, and (4) Action Networks.

(1)   Informational networks can be seen as clearinghouses for information. Action based on the exchange is left to the discretion of the participants. In disaster management informational networks exist among various first responders and elected officials.

(2)   Developmental networks combine "information and technical exchange…with education and member service" (Agranoff, 2007, 10). These networks function as a conduit for capacity building among member organizations. In homeland security policy, these networks serve to assist member organizations by providing not only information but expertise that assists members in implementing best practices. The National Institute of Schools of Public Administration in Central and Eastern Europe (NISPAcee) is an example of a developmental network

(3)   Outreach networks integrate information exchange and technologies that "lead to new programming avenues" (Agranoff, 2007, 10). In disaster management these networks not only serve to exchange information and expertise, but also to assist in implementing new programs. One example would be the United Nations Educational and Scientific Organization (UNESCO).

(4)   Action networks are those in which member organizations "formally adopt

collaborative courses of action" (Agranoff, 2007, 10) in addition to

exchanging information, expertise and technology. These networks deliver

services that are agreed upon by the network itself. The EUCPM and

specifically the MIC are an example of an "action network" that has formed in

the last decade. Not only does the EUCPM provide information, expertise

and technology, when mobilized for a man-made or natural disaster, the MIC

deliver services to the effect country or countries. Figure one depicts the

relationship of "action networks within the typology of PMNs. Figure one on

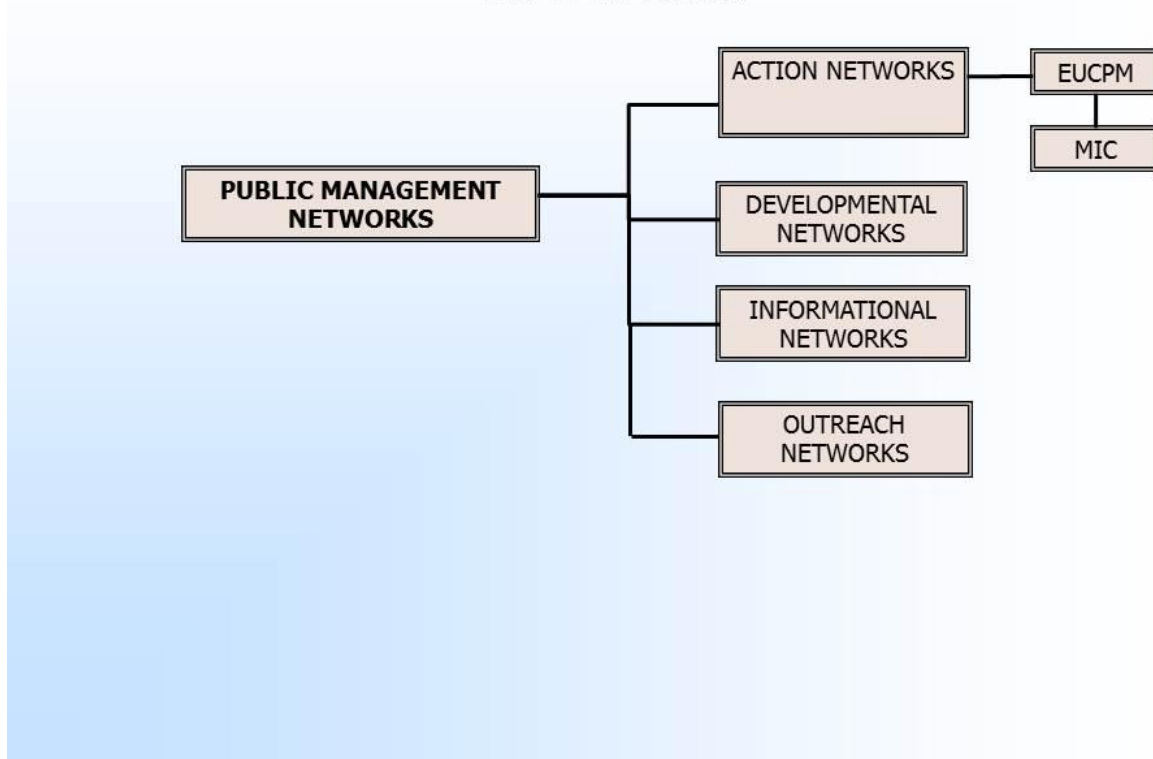the next page provides a representation of the EUCPM in the context of

PMNs

Figure 1: Typology of the EUCPM network (Based on Agranoff, 2007)

This study analyzes two factors present in the activations of the EUCPM:

(1) The density of connections between the actors in the network

(2) the amount of "transitivity" among the various organizations as a measure of the ability of groups to work together.

This was done by analyzing the database created for the EUCPM from the years $2007 - 2011$ Specifically, the year, the type of disaster, the country requesting assistance and the membership of the MIC team activated and mobilized to respond to the natural disaster. The evidence of a connection between the countries will be established by their request from the EUCPM and the composition of the MIC team. For example, there were multiple requests for assistance from the country of Ukraine to the EUCPM as a result of floods that occur each rainy season. As a result the network existing between the EU and Ukraine is denser than it is with other parts of the network making it more central to the network. This is also important because during the next activation assistance can be delivered more quickly and efficiently as the network has already been developed.